

1 WHAT IS CLAIMED IS:

1. Reagent useful for diagnosing attention deficit hyperactivity disorder (ADHD), comprising a polynucleotide corresponding to an allele of *DRDR* associated with
5 individuals exhibiting ADHD.

2. The reagent of claim 1, wherein the polynucleotide corresponds to the *DRD4* 7R allele.

10 3. Reagent useful for diagnosing ADHD, comprising a polynucleotide corresponding to a marker the locus of which is within a block of linkage disequilibrium surrounding the *DRD4* 7R allele.

15 4. The reagent of claim 3, wherein the locus of the marker is within 100 kB of the *DRD4* 7R allele.

20 5. The reagent of claim 3, wherein the locus of the marker is within 50 kB of the *DRD4* 7R allele.

6. Reagent useful for diagnosing ADHD, comprising a pair of oligonucleotides corresponding to an allele of *DRDR* associated with individuals exhibiting ADHD.

25 7. The reagent of claim 6, wherein the pair of oligonucleotides corresponds to the *DRD4* 7R allele.

30 8. Reagent useful for diagnosing ADHD, comprising a pair of oligonucleotides corresponding to a marker the locus of which is within a block of linkage disequilibrium surrounding the *DRD4* 7R allele.

9. The reagent of claim 8, wherein the locus of the marker is within 100 kB of the *DRD4* 7R allele.

35 10. The reagent of claim 8, wherein the locus of the marker is within 50 kB of the *DRD4* 7R allele.

1 11. A method for diagnosing ADHD in an individual, comprising the steps of:
a) obtaining a tissue sample from the individual;
b) treating the sample so as to expose DNA present in the sample;
5 c) contacting the exposed DNA with a labeled DNA oligomer under conditions
permitting hybridization of the DNA oligomer to any DNA complementary to the DNA
oligomer present in the sample, the DNA complementary to the DNA oligomer containing
the *DRD4* 7R allele;
d) removing unhybridized, labeled DNA oligomer; and
10 e) detecting the presence of any hybrid of the labeled DNA oligomer and DNA
complementary to the DNA oligomer present in the sample, thereby detecting and diagnosing
ADHD.

15 12. A method for diagnosing ADHD in an individual, comprising the steps of:
a) obtaining a tissue sample from the individual;
b) treating the sample so as to expose DNA present in the sample;
c) contacting the exposed DNA with a labeled DNA oligomer under conditions
20 permitting hybridization of the DNA oligomer to any DNA complementary to the DNA
oligomer present in the sample, the DNA complementary to the DNA oligomer containing a
marker within a region of strong linkage disequilibrium to the *DRD4* 7R allele;
d) removing unhybridized, labeled DNA oligomer; and
e) detecting the presence of any hybrid of the labeled DNA oligomer and DNA
25 complementary to the DNA oligomer present in the sample, thereby detecting and diagnosing
ADHD.

30 13. A method for diagnosing ADHD in an individual, comprising the steps of:
a) obtaining a tissue sample from the individual;
b) providing an oligonucleotide complementary to the sense strand of the *DRD4* gene;
c) providing an oligonucleotide complementary to the antisense strand of the *DRD4*
gene;
d) treating the sample so as to expose DNA present in the sample;
35 e) contacting the exposed DNA with the oligonucleotides under conditions permitting
amplification of the *DRD4* gene;
f) sequencing the product of the amplification; and

1 g) detecting the presence of the *DRD4* 7R allele in the sample, thereby detecting and
diagnosing ADHD.

14. A method for diagnosing ADHD in an individual, comprising the steps of:

- 5 a) obtaining a tissue sample from the individual;
- b) providing an oligonucleotide complementary to the sense strand of a marker
sequence found in an area of strong linkage disequilibrium with the *DRD4* 7R allele;
- 10 c) providing an oligonucleotide complementary to the antisense strand of the marker
sequence;
- d) treating the sample so as to expose DNA present in the sample;
- e) contacting the exposed DNA with the oligonucleotides under conditions permitting
amplification of the marker sequence;
- 15 f) sequencing the product of the amplification; and
- g) detecting the presence of the marker sequence in the sample, thereby detecting and
diagnosing ADHD.